REMARKS

The Applicant has amended claim 6 to correctly depend from claim 1 in order to address the Examiner's objection. No new subject matter has been added in these amendments.

Provisional Election and Traverse

The Examiner required restriction of the inventions identified as Inventions I and II. The Applicant affirms the election of Invention I, being claims 1-7 and 11-16.

Claims 8-10 and 17-19 have been withdrawn, without prejudice to the Applicant's entitlement to pursue this invention in a divisional or continuation application.

Claim Rejections based on Prior Art

The Examiner rejected claims 1, 3, 5-7, 11, 13, 15 and 16 on the basis that the subject matter would have been obvious to a person skilled in the art in view of Calhoun *et al.* in combination with Komura *et al.* The Examiner rejected claims 2, 4, 12 and 14 on the basis that the subject matter would have been obvious to a person skilled in the art in view of Calhoun et al. in combination with Komura et al. as applied to claims 1 and 11, and further in view of Simila and Ono *et al.* Finally, the Examiner has rejected pending claims 1-7 as being unpatentable having regard to Simila in view of Komura and Ono in view of Komura.

The Applicant respectfully submits that the claims are patentably distinguishable from the cited prior art, and that a person skilled in the art could not be led to the claimed invention by the cited prior art. The Applicant further submits that a person skilled in the art would not be motivated to combined the cited prior art to arrive at the present invention. The Applicant traverses the rejection and submits that claims 1-7 and 11-16 are patentable over the prior art.

The claimed invention teaches a method of adhering a first material to a second material, comprising the steps of: a) positioning the first material on a work surface, with an adhesion zone exposed; b) applying an anchoring adhesive to the first material or to the second material or to both, to form a plurality of substantially isolated adhesive anchors separated by interstitial spaces; c) after the anchoring adhesive has gelled or cured, applying a bonding adhesive to the

first material or to the second material or to both; and d) adhering the first and second materials together; whereby the anchoring adhesive has a relatively higher degree of adhesion to the first material or to the second material or to both than the bonding adhesive, and the bonding adhesive intrudes into the interstitial spaces and bonds to the adhesive anchors.

In the claimed invention, an anchoring adhesive selected for its ability to adhere to a material that provides a poor adhesive interface for the bonding adhesive of choice, is applied to the adhesion zone and creates a plurality of substantially isolated adhesive anchors distributed over the adhesion zone. The anchoring adhesive serves to anchor the bonding agent to the material. The applicant submits that this is not taught or suggested by the prior art, alone or in combination. It is respectfully submitted that none of the prior art teaches or suggests creative adhesive anchors for the purpose of improving adhesion with a second adhesive (bonding agent).

Calhoun *et al.* teach a heat-activatable adhesive article that includes a substantially laterally stable heat recoverable carrier film having at least one surface comprising a recessed surface portion and a raised surface portion therein; and an adhesive layer in the recessed surfaced portion in an amount such that the adhesive does not extend above the raised surface portion thereby forming an exposed raised surface portion. The carrier film recovers upon exposure to heat thereby allowing the adhesive in the recessed surface portion to contact a substrate. The Examiner asserts that Calhoun *et al.* disclose a method of "adhering a first material (the substrate, column 2, line 3) to a second material 311, comprising: applying an anchoring adhesive 318 to the second material 311, to form a plurality of substantially isolated adhesive anchors substituted by interstitial spaces". It is respectfully submitted that Calhoun *et al.* do not teach an anchoring adhesive that forms a plurality of substantially isolated adhesive anchors. Rather it is the non-adhesive carrier film, not an adhesive, that forms the projections. Calhoun *et al.* teach (at column 2, lines 13- 24):

> "The raised surface portion in the carrier film can be substantially continuous, thereby forming one continuous projection. This results in the recessed surface portion being discontinuous. When the recessed surface portion is discontinuous, separate recesses are formed that are spaced apart from one another. In this embodiment, the recesses act as individual pockets or containers for the adhesive and allow the adhesive to be patterned into individual segments. *Each of the individual recesses of this segmented recessed*

surface portion are not completely filled with adhesive, thereby allowed the raised surface portion to extend above the level of the adhesive."

Calhoun *et al.* further teach at column 2, lines 26-33 that the surface of the carrier film contains a plurality of spaced apart projections, "i.e. protrusions, preferably substantially uniformly distributed, protruding through the adhesive layer at intermittent points along the surface of the adhesive." Calhoun *et al.* specifically state (column 2, lines 59-67, column 3, lines 1-3): "whether position, repositionable or both, the articles of the present invention all have a portion of the carrier film that extends above the surface of the adhesive on the recessed surface portion such that the adhesive does not contact the substrate until the article has been subjected to thermal energy and the carrier film "activated", i.e. modified, to allow such contact."

In the claimed invention, the substantially isolated adhesive anchors are created by the anchoring adhesive. Calhoun *et al.*, on the other hand, teach projections formed from the carrier material - not from the adhesive. If indeed, as the Examiner asserts, the projections in Calhoun *et al.* were formed by the adhesive, the functional advantage of Calhoun *et al.* would not be realized. Thus, Komura *et al.* cannot be combined with Calhoun *et al.*, nor would there be any motivation to do so. (The applicant submits that in any event Komura *et al.* does not teach the concept of adhering a bonding agent to an adhesive having different adhesion properties to improve adhesion of the former to a substrate, but rather teaches that different adhesives can all be adhered to the same material, e.g. pipes 5 and 6 or a cover, as will be discussed in more detail below.)

A stated advantage of Calhoun *et al.*'s invention is to have spaced-apart projections that project through the substantially continuous adhesive layer at intermittent points, and extend above the level of the adhesive specifically so as to *not* allow the adhesive to contact the substrate until the application of heat (which modifies the film by retracting or shrinking the projections). The recesses contain most of the adhesive such that the adhesive does not contact the substrate until the article has been subjected to thermal energy and the carrier film activated. Therefore the adhesive article can be easily slid over into the proper position without pre-adhering to the substrate. That is, the stated function of the protrusions in Calhoun *et al.* is to avoid adhesion. If indeed the protrusions were adhesive, the article would not slide into the proper position as the protrusions would pre-adhere (or adhere) to the substrate. Consequently, Calhoun *et al.*'s

invention would not provide "positionable and/or repositionable articles," and the stated function of their invention would not be achieved.

Thus, the object of providing projections in Calhoun *et al.* is completely different from the objects of the present invention. They are not adhesive anchors. Moreover, Calhoun *et al.* actually teach away from the subject invention. Note the statement at column 2, lines 35-40: "Whether the raised surface portion or recessed surface portion is continuous or discontinuous, the amount or thickness of the adhesive coated on the surface of the carrier film does not extend above the height of the raised surface portion i.e., projection or projections, that extend from the backing portion of the carrier film." Note also his teaching at column 7, lines 27-29, that "the exposed surface of the raised surface portion or projection is preferably substantially free of any adhesive."

Similarly, in Ono *et al.* the adhesive anchors 3 are not applied to the substrate 1, rather they are fixed to the exposed terminals 2 and the resin film 4 that is applied is not a bonding agent, it is merely a protective covering. Ono *et al.* provide terminal electrodes 2 having flat top surfaces on which conductive adhesive layers (portions) 3 are formed. A resin film 4 is attached and adheres to an entire surface of the main body 1 of the circuit substrate so as to cover the conductive adhesive layers 3 (column 7, lines 50-57). Therefore, Ono *et al.* do not teach adhesive anchors that are created by an anchoring adhesive and to which a bonding agent is applied.

Simila solves the problem of obtaining a controlled bondline between a substrate and a component. Simila does not teach creating adhesive bosses for the purpose of improving adhesion with a second adhesive (bonding agent). The Examiner agrees that Simila does not teach that the two different adhesives have different adhesion characteristics, but goes on to state that one skilled in the art would appreciate when using different adhesives that the adhesives would most likely have different strengths. The applicant submits that there is no foundation for this statement. But regardless, it is a huge leap to infer that it would be obvious to choose a first adhesive that adheres more strongly to the substrate to create adhesive anchors and then bond the second adhesive to the first. Why? Where is this notion taught in any of the prior art?

With respect, the Examiner is applying hindsight based on the teachings of the present application to patents that have completely different objectives. Simila does not teach or suggest

anything relating to improving adhesion of the component to the substrate. The sole object of Simila is to produce constant bondline between a substrate and a component such that the adhesive bond is capable of withstanding thermal excursions (or temperature changes) to which a finishing product is expected to be exposed during its life. On what basis would the reader of Simila care what the relative adhesive properties of the different adhesives are *vis a vis* the substrate? The applicant respectfully submits that this is not obvious based on any of the prior art. And Komura *et al.*, as has been addressed above, do not teach the concept of adhering a bonding agent to an adhesive having different adhesion properties to improve adhesion of the former to a substrate and therefore does not add anything to the teachings of Simila.

An advantage of the claimed invention in having substantially isolated adhesive anchors created by the anchoring adhesive is to improve bonding by adding physical and chemical bonding sites to the adhesion zone, and allow the adhesive of choice to be used as a bonding adhesive to bond the materials without sacrificing the quality or durability of the finished product. Moreover, the bonding adhesive intrudes into the interstitial spaces between adhesive anchors and adheres to the anchoring sites formed by the adhesive anchors, to thereby bond to the material in the adhesion zone with a degree of adhesion greater than the adhesion of the bonding adhesive would have if applied directly to the substrate, and potentially comparable to the strength of the adhesion of the anchoring adhesive to the substrate. Neither Calhoun *et al.*, Ono *et al.* or Simila teach or suggest any of these advantages, alone or in combination with any of the cited art.

In effect, the Examiner has agreed that Calhoun *et al.*, Ono *et al.* and Simila are all silent on the degrees of adhesion between the anchoring adhesive and the bonding adhesive, yet the Examiner has combined them with Komura *et al.* to find that this feature would be obvious. The Examiner thus relies entirely on Komura as teaching the use of adhesives 2, 3 having different degrees of adhesion – even more so, different adhesion characteristics relative to the substrate – and thus rendering the invention obvious.

Komura *et al.* teach a heat shrinkable material comprising a heat shrinkable substrate and a layer of different kinds of adhesives provided on the substrate, which exhibit excellent resistance and adhesion properties over a wide temperature range. Komura *et al.* thus solve the problem of heat shrinkable materials that exhibit good adhesion at low temperatures but poor adhesion at higher

temperatures. This has nothing to do with the claimed invention, which solves the problem of adhering one material to another where one of the materials has poor adhesion in relation to the chosen adhesive. The adhesives in Komura *et al.* are not chosen for their ability to adhere to each other or their relative ability to adhere to a substrate or to improve adhesion with a second adhesive (bonding agent). Rather, they are chosen for their capability to differentially adhere at different temperatures. As Komura *et al.* is directed toward adhesives and their properties over a wide temperature range, a person skilled in the relevant art would *not* be motivated to use this reference or combine it with Calhoun *et al.*, Ono *et al.* or Simila to come to the claimed invention.

In short, in Komura *et al.* neither adhesive is used to improve the adhesion of the other adhesive to the substrate (pipe or coating); they are alternatives selected so that if one fails to hold the cover to the pipe, the other will. But each adhesive bonds the cover to the pipe, and the relative adhesion of the respective adhesive to the cover or the pipe is irrelevant. Overall the adhesion of the cover to the pipe is improved because of the redundancy of providing adhesives that have different thermal breakdown characteristics, but, with respect, this does not in any way teach what the Examiner agrees is missing from Calhoun *et al.*, Ono *et al.* and Simila: that one adhesive can be used to improve the adhesion of another adhesive to a substrate.

It is accordingly respectfully submitted that the Examiner's objections should be withdrawn. Favourable reconsideration and allowance of this application are requested.

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